Update on Proposed Amendments to the Radiation Protection Regulations: Lens of the Eye

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Outline

• Background on *Radiation Protection Regulations* amendments
• Proposed amendments to the dose limit for the lens of the eye
  - stakeholder feedback
• CNSC’s current position
  - guidance for licensees
• Next steps
Canadian Nuclear Safety Commission

Proposed Amendments to RPR: Lens of the Eye

3

Background

- Current *Radiation Protection Regulations* (RPR):
  - promulgated May 31, 2000
  - patterned after the International Commission on Radiological Protection (ICRP) 60 (1990) recommendations
- Few minor amendments since 2000
Rationale for Revision

- Changes to international benchmarks:
  - ICRP 103 Recommendations
  - revision of International Atomic Energy Agency (IAEA) and European Union (EU) Basic Safety Standards (2014)

- Operational issues identified
- Fukushima disaster

Source: ICRP Web Site
Discussion Paper, DIS-13-01

- **DIS-13-01** published on the CNSC website in August 2013 for a 120-day public consultation period
  - proposed revisions in ~ 20 sections of the RPR
  - objective was to seek feedback on the proposed revisions
- Significant stakeholder feedback received
“What We Heard” Report

- “What We Heard” report published on CNSC website
- Summarizes:
  - stakeholder feedback on proposed amendments
  - planned path forward for proposed amendments
  - next steps in the project
“What We Heard” Report: Lens of the Eye

• Stakeholders identified concerns with the proposed change to the dose limit for the lens of an eye
• There is a need for additional communication with stakeholders and licensees
Proposed Amendment to Section 14

Proposal:

• Amendment to the dose limit for the lens of an eye for a nuclear energy worker from the current limit of 150 mSv per one-year dosimetry period to **50 mSv per one-year dosimetry period**

• Addition of a new dose limit for the lens of an eye for a nuclear energy worker of **100 mSv per five-year dosimetry period**

• No change proposed for dose limit for member of the public (15 mSv per year)
Planning to proceed with proposed amendment based on the following:

- Recent scientific studies clearly indicate that the risk to the lens of the eye from radiation exposure is higher than was originally known. These studies have been evaluated and accepted by the ICRP.

- Lens opacities and cataracts are a health effect that should be prevented.

- Alignment with international recommendations and requirements is encouraged for all member states of the IAEA, which includes Canada.

New evidence regarding risk to the lens of the eye has no impact on risk to other tissues and organs. Effective dose limits remain protective!
Technical Note

• Technical Note will be sent to all licensees in early 2016

• Includes the following information:
  - background
  - CNSC’s plan moving forward
  - guidance for licensees in advance of planned change to the dose limit
Licensees are encouraged to consider the relevant information and initiate the following steps:

1. Investigate if work practices need to be modified to reduce exposure to the lens of the eye
2. Review existing education and training material on this matter and incorporate the most current risk information
3. Undertake a preliminary hazard assessment to evaluate if workers might receive elevated exposures to the lens of the eye
4. Ascertain dose to the lens of the eye
1. Work Practices

Investigate if work practices need to be modified to reduce exposure to the lens of the eye. Methods include:

- implementation of engineered controls
- use of personal protective equipment including safety goggles
- use of administrative controls such as procedural requirements and restrictions
2. Education and Training

Review education and training material. Training material may include:

- ICRP risk information
- CNSC’s proposed changes to the dose limit to the lens of the eye
- enhancements to radiation protection measures to optimize doses to the lens of the eye
Undertake a preliminary workplace assessment. Evaluate if workers fall into one or more of these categories:

- workers exposed to low penetrating radiation that may contribute to the equivalent eye dose but less so, or not at all, to the effective dose

- workers exposed to non-uniform fields of radiation, including situations where:
  - the eyes are closer to the source of radiation than the rest of the body
  - the trunk of the body is shielded and the eyes are not shielded
If no (workers do not fit in one of those categories):

- current dose assessment methods likely acceptable
- demonstrating compliance with effective dose limit shows compliance with proposed lens of the eye limit
  - if estimated lens doses approach the dose limits, optimization practices will now need to consider lens of the eye

If yes (workers fit in one of those categories):

- impact on dosimeter type and placement
Next Steps: Lens of the Eye

- Technical Note will be communicated to all licensees
- Additional focused outreach (e.g., Canadian Radiation Protection Association conference)
- Ongoing communication and engagement with stakeholders
Next Steps: Regulatory Amendments Project

- The regulatory amendments will be pre-published in the *Canada Gazette*, Part I for further stakeholder input

- Proposed amendments will be presented to the CNSC Commission and Governor in Council for consideration

- If approved, amended regulations will be published in *Canada Gazette*, Part II